IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A robot apparatus having a plurality of movable joint parts, comprising:

a plurality of motors for driving the plurality of movable joint parts;

a plurality of first overload detection means for detecting whether loads in the plurality of motors are excessive, respectively;

load absorbing control means for, when any of the plurality of first overload detection means detects overload in a corresponding motor, controlling a process to absorb the overload in the corresponding motor;

second overload detection means for detecting whether loads in two or more motors are totally excessive; and

body protection control means for carrying out a prescribed body protection operation when the second overload detection means detects that the load in two or more motors is totally ~~overload~~ excessive.

Claim 2 (Currently Amended): A load absorbing apparatus for absorbing load applied to a motor, comprising:

torque measuring means for measuring a load torque based on a sum of absolute values of a torque applied to a link connected to an output shaft of the motor and a generated torque of the motor;

overload detection means ~~which determines~~ for determining that overload has been applied when the load torque measured by the torque measuring means exceeds a first threshold value for a prescribed period of time or longer; and

load absorbing control means for controlling a process to absorb the overload in the motor when the overload detection means detects the overload.

Claim 3 (Original): The load absorbing apparatus according to Claim 2, wherein the first threshold value is a value around a stall torque of the motor or a threshold value of a limitation for circuit protection.

Claim 4 (Original): The load absorbing apparatus according to Claim 2, wherein the load absorbing control means reduces the generated torque of the motor in response to detection of the overload.

Claim 5 (Original): The load absorbing apparatus according to Claim 2, wherein the load absorbing control means changes a viscosity coefficient of the motor in response to detection of the overload.

Claim 6 (Currently Amended): A load absorbing apparatus for absorbing load applied to a motor, comprising:

kinetic energy measuring means for measuring kinetic energy applied to an output shaft of the motor;

overload detection means ~~which determines~~ for determining that overload will be applied when variation of the kinetic energy measured by the kinetic energy measuring means exceeds a second threshold value; and

load absorbing control means for controlling a process to avoid the overload in the motor when the overload detection means detects the overload.

Claim 7 (Original): The load absorbing apparatus according to Claim 6, wherein the overload detection means determines that the overload will be applied when double differentiation of the kinetic energy with respect to time exceeds the second threshold value.

Claim 8 (Original): The load absorbing apparatus according to Claim 6, wherein the load absorbing control means reduces a generated torque of the motor in response to detection of the overload.

Claim 9 (Original): The load absorbing apparatus according to Claim 6, wherein the load absorbing control means changes a viscosity coefficient of the motor in response to detection of the overload.

Claim 10 (Original): A load absorbing apparatus for absorbing load applied to a motor, comprising:

torque measuring means for measuring a load torque based on a sum of absolute values of a torque applied to a link connected to an output shaft of the motor and a generated torque of the motor;

kinetic energy variation measuring means for measuring variation of kinetic energy applied to the output shaft of the motor;

overload detection means for detecting overload based on the load torque measured by the torque measuring means or the variation of kinetic energy measured by the kinetic energy variation measuring means; and

load absorbing control means for controlling a process to absorb the overload in the motor when the overload detection means detects the overload.

Claim 11 (Original): A load absorbing method for absorbing load applied to a motor, comprising:

a torque measuring step of measuring a load torque based on a sum of absolute values of a torque applied to a link connected to an output shaft of the motor and a generated torque of the motor;

an overload detection step of determining that overload has been applied, when the load torque measured in the torque measuring step exceeds a first threshold value for a prescribed period of time or longer; and

a load absorbing control step of controlling a process to absorb the overload in the motor when the overload is detected in the overload detection step.

Claim 12 (Original): The load absorbing method according to Claim 11, wherein

the first threshold is a value around a stall torque of the motor or a threshold value of a limitation for circuit protection.

Claim 13 (Original): The load absorbing method according to Claim 11, wherein

the load absorbing control step reduces the generated torque of the motor in response to detection of the overload.

Claim 14 (Original): The load absorbing method according to Claim 11, wherein

the load absorbing control step reduces a viscosity coefficient of the motor in response to detection of the overload.

Claim 15 (Original): A load absorbing method for absorbing load applied to a motor, comprising:

a kinetic energy measuring step of measuring kinetic energy applied to an output shaft of the motor;

an overload detection step of determining that overload will be applied, when variation of the kinetic energy measured in the kinetic energy measuring step exceeds a second threshold value; and

a load absorbing control step of controlling a process to avoid the overload in the motor when the overload is detected in the overload detection step.

Claim16 (Original): The load absorbing method according to Claim 15, wherein the overload detection step determines that the overload will be applied, when double differentiation of the kinetic energy with respect to time exceeds the second threshold value.

Claim 17 (Original): The load absorbing method according to Claim 15, wherein the load absorbing control step reduces a generated torque of the motor in response to detection of the overload.

Claim 18 (Original): The load absorbing method according to Claim 15, wherein the load absorbing control step reduces a viscosity coefficient of the motor in response to detection of the overload.

Claim 19 (Original): A load absorbing method for absorbing load applied to a motor, comprising:

a torque measuring step of measuring a load torque based on a sum of absolute values of a torque applied to a link connected to an output shaft of the motor and a generated torque of the motor;

a kinetic energy variation measuring step of measuring variation of kinetic energy applied to the output shaft of the motor;

an overload detection step of detecting overload based on the load torque measured in the torque measuring step or the variation of kinetic energy measured in the kinetic energy variation measuring step; and

a load absorbing control step of controlling a process to absorb the overload in the motor when the overload is detected in the overload detection step.

Claim 20 (Original): A robot apparatus comprising a plurality of motors for joint actuators, comprising

a load absorbing apparatus described in Claim 2 or Claim 6.